

REMARKS

Claims 1-3 and 5-12 remain pending in the present application. Claim 1 has been amended. Claims 10-12 are new. Basis for the amendments and new claims can be found throughout the specification, claims and drawings originally filed.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 3 and 5-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Flemings, et al. (U.S. '365). Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Flemings, et al. (U.S. '365) and further in view of Yamaguchi, et al. (U.S. Pat. No. 6,460,596). The Examiner states that it is clearly shown in Figure 1 that the mold is in an upright configuration and thus the top movable mold is moving up and down on the tie rods. Applicant has reviewed Fleming, et al. and can find nothing in Fleming, et al. which indicates the top mold is moving.

Figures 2A-2C are views of one-half of a mold. Column 2, lines 13 and 14 state "Figures 2a-2c show three views of one-half of a die casting mold according to the invention. Thus, the Examiner's statement that Figures 2b and 2c are shown in sectional view along AA and BB and does not mean that these are mold halves is incorrect. Figure 2a is one-half of a mold as clearly defined by the specification. Figures 2b and 2c are sectional views of the one-half mold in Figure 2a and thus these are clearly section lines of one-half of a mold. The specification, as pointed out above, fully supports this interpretation of the figures.

Thus, it is clear that the mold shown in Figures 2a-2c has a vertical parting line and that a mating half to this mold moves horizontally with respect to the one-half

shown in Figures 2a-2c or vice versa. Since the molten metal is injected through neck 20 and gates 22, when the entire mold 18 is combined with the die cast apparatus 10, it is clear that there is no up and down movement of die 18, it separates along a vertical plane by horizontal movement of the die.

Thus, when we look at Figure 1 in view of what we know of the die configuration in Figures 2a-2c, the only conclusion that can be made is that the die in Figure 1 also moves horizontally to open and there is no vertical movement as suggested by the Examiner. The only interpretation of Fleming, et al. that has support in Fleming, et al. is the horizontal movement of the die halves. There is nothing in Fleming, et al. that supports vertical movement of dies.

Applicants have amended Claim 1 to define the fixed mold as defining a movable cavity. The fixed cavity and the movable cavity each define a portion of the metallic product. This is illustrated in Figure 1 where the ejector pins 8 extend beyond parting surface 9 through a portion of the movable mold to reach cavity 3 and eject the part once the mold is opened.

In Fleming, et al., the upper mold defines the mold cavity 26. This feature also justifies the interpretation of the mold opening horizontally since any other way of opening would not release the molded part. Fleming, et al. teaches away from having the mold cavity in lower portion 32 since the heating of the lower mold portion means that the metal in channels 22 remains liquid (column 3, lines 8 and 9). Thus, if a portion of the mold cavity was defined by lower portion 32, the molded article would never solidify.

Thus, Applicants believe Claim 1, as amended, patentably distinguishes over the art of record. Likewise, Claims 2, 3 and 5-9, which ultimately depend from Claim 1, are also believed to patentably distinguish over the art of record. Reconsideration of the rejection is respectfully requested.

NEW CLAIMS

New Claim 10 is dependent on Claim 1 and it defines the operation of the temperature control means when the mold is closed.

New Claim 11 is an independent claim which defines the features of the present invention. New Claim 12 is dependent on Claim 11 and it includes limitations similar to Claim 10.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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